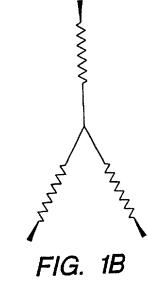


FIG. 1A



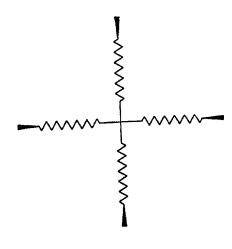


FIG. 1C

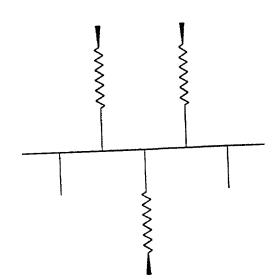


FIG. 1E

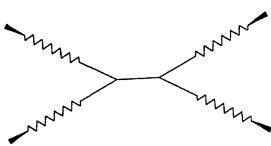


FIG. 1D

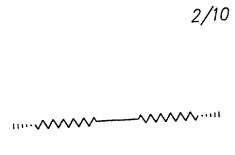


FIG. 2F

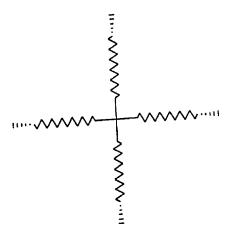


FIG. 2H

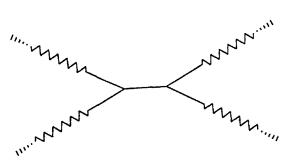


FIG. 21

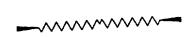


FIG. 3K

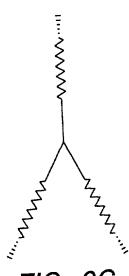


FIG. 2G

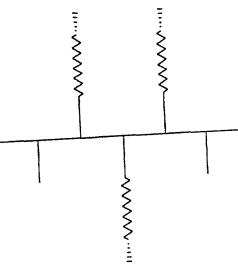


FIG. 2J



FIG. 3L

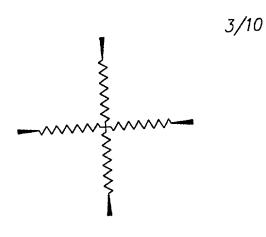


FIG. 3M

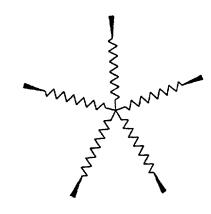


FIG. 30

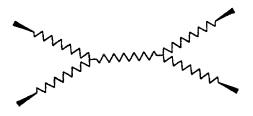


FIG. 3N

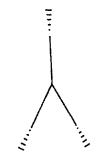
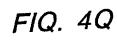


FIG. 4P



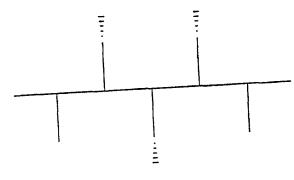


FIG. 4T

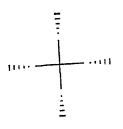


FIG. 4R

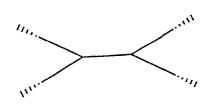


FIG. 4S



FIG. 5U



FIG. 5V

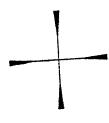


FIG. 5W

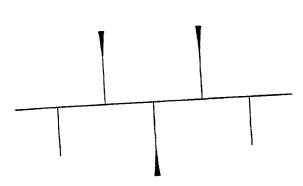


FIG. 5Y

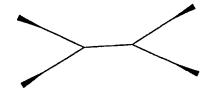


FIG. 5X

Water Soluble Fragments

FIG. 6

Hydroxy terminated biodegradable multifunctional polymer

R— $SO_2$ —CIActivation of R= $CH_2CF_3(tresyl); CF_3(trefyl);$  $Hydroxyl\ groups$   $C_6F_5; C_6H_4CH_3(tosyl)$ 

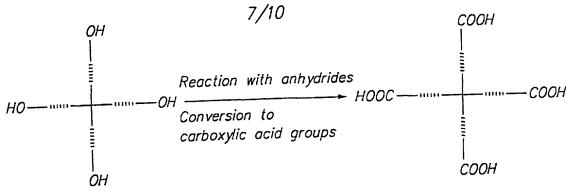
pH 7 to 10 Crosslinking with amine terminated di-or multifunctional polymer -RSO3H

Crosslinked polymer hydrogel

## FIG. 7

$$0$$
  $0$   $SO_3M$   $M=Na,K,Li$   $N-Hydroxysulfosuccinimide Ester  $0$$ 

FIG. 9



Hydroxy terminated 4 arm polymer like PEO-caprolactone DCC,NHS in polar solvents Activation with NHS  $NH_2$  $NH_2$  $H_2N$ 10 0  $\dot{N}H_2$ Amine terminated tetrafunctional PEG water buffered to pH 7 to 10 Crosslinking reaction Hydrolysis of biodegradable segments soluble fragments 0 FIG. 8

Water soluble degradation products

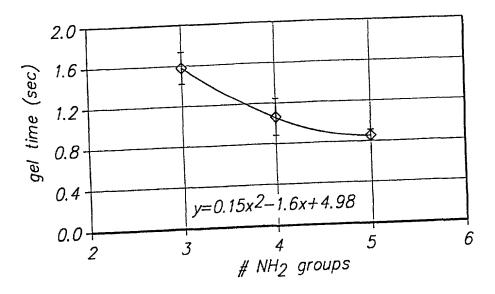


FIG. 11

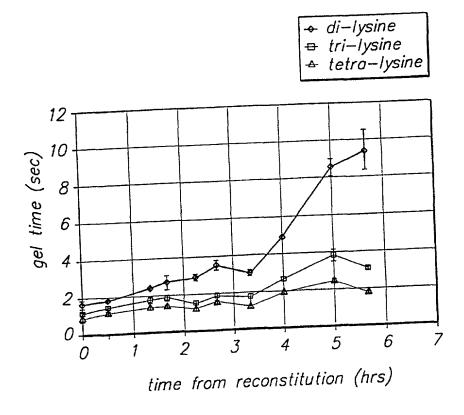


FIG. 12

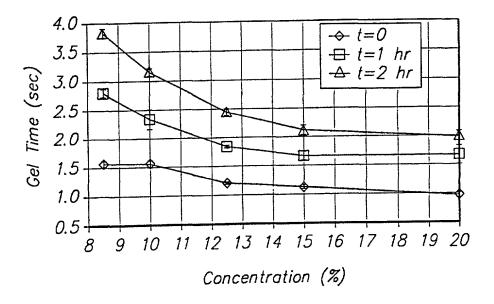


FIG. 13

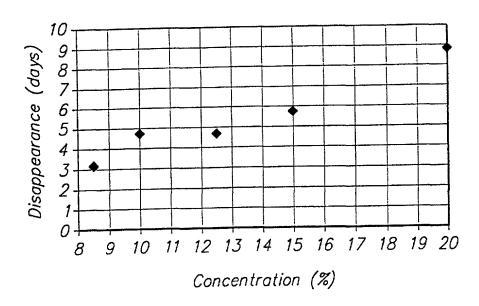


FIG. 14